



Serial No.: 10/089,802
Docket No.: 28951.3110

IN THE CLAIMS:

1. (Currently Amended) A method of driving a display panel, comprising:
setting a pixel luminance value to a target luminance setting value at least two
times at predetermined time intervals; and
carrying out luminance value setting operations such that a luminance setting value is set
to a different luminance setting value each time a luminance value setting operation is
performed, so that the luminance setting value is changed with the elapse of driving time;
wherein the luminance setting values are determined from measured luminance information of
the ~~pixel~~ pixels during successive video blanking periods.
2. (Previously Presented) The method of driving a display panel according to claim
1, wherein said pixel luminance value is corrected to match the determined luminance setting
values.
3. (Currently Amended) A method of driving a display panel wherein pixels are
driven, luminance information is captured from the pixels and measured, correction values are
calculated from the measured luminance information and a luminance setting value, the
correction values are stored in a correction memory, and a driving amount is corrected in
accordance with the correction memory, the method comprising:
setting pixel luminance value to a target luminance setting value at least two times
at predetermined time intervals; and

carrying out luminance setting operations such that a luminance setting value is set to a different luminance setting value each time a luminance setting value operation is performed, so that the luminance setting value is changed with the elapse of driving time, wherein the luminance setting value is determined from measured luminance information of the pixels during successive video blanking periods, the measured luminance information acquired by an array of anodes in the display panel positioned over the pixels.

4. (Original) The method of driving a display panel according to claim 1, wherein each of the luminance setting values does not exceed a preceding luminance setting value.

5. (Currently Amended) A method of driving a display panel, comprising:
setting a pixel luminance value to a target luminance setting value at least three times at predetermined time intervals with a luminance setting value determined from measured luminance information of pixels during successive video blanking periods; and

carrying out luminance correcting operations such that each of the time intervals between the luminance correction operations differ, whereby the starting interval of recorection operation is varied; wherein the intervals between the luminance correction operations are varied according to the luminance degradation characteristics of display elements.

6. (Cancelled)

7. (Currently Amended) A method of driving a display panel wherein pixels are driven, luminance information is captured from the pixels and measured, correction values are calculated from the measured luminance information and a luminance setting value, the correction values are stored in a correction memory, and a driving amount is corrected in accordance with the correction memory, the method comprising:

carrying out a series of renewal operations on the correction memory for all of the pixels at least two times at predetermined time intervals, wherein the luminance setting value is determined from measured luminance information of the pixels during successive video blanking periods.

8. (Previously Presented) The method of driving a display panel according to claim 7, wherein the series of renewal operations on the correction memory, instead of being carried out at specified time intervals, is repeated continuously.

9. (Previously Presented) The method of driving a display panel according to claim 2, wherein the operations for correcting luminance setting values are carried out during periods other than video output periods.

10. (Previously Presented) The method of driving a display panel according to claim 3, wherein capturing luminance information from the pixels comprise at least illuminating the pixels during periods other than video output periods.

11. (Original) The method of driving a display panel according to claim 10, wherein the periods other than video output periods are vertical blanking periods, and luminance information from a given number of grouped pixels is captured during each of these periods.

12. (Original) The method of driving a display panel according to claim 10, wherein adjacent pixels are not successively driven.

13. (Original) The method of driving a display panel according to claim 3, wherein the correction value calculations are carried out using both measured luminance information and degradation characteristics related to either the luminance of elements for which luminance has been measured or to the luminance of pixels for which luminance has been measured.

14. (Previously Presented) The method of driving a display panel according to claim 13, wherein the display panel has a light-emitting surface with phosphors, and the correction value calculations are carried out using both measured luminance information and degradation characteristics related to the luminance of the phosphors.

15. (Original) The method of driving a display panel according to claim 13, wherein the degradation characteristics are measured in advance, rates of degradation are calculated based on the driving integral amount of every pixel, correction values are calculated using both the measured luminance information and the rates of degradation, and the correction memory is renewed.

16. (Original) The method of driving a display panel according to claim 2, wherein until the difference between the measured luminance information and the luminance setting value reaches a fixed value or less, correction operations are repeated continuously.

17. (Original) The method of driving a display panel according to claim 3, wherein the captured luminance information is driving current.

18. (Original) The method of driving a display panel according to claim 3, wherein the captured luminance information is that of the starting point of the illumination of pixels.

19. (Original) The method of driving a display panel according to claim 3, wherein the display panel has at least an anode electrode and a light-emitting surface having a plurality of phosphors on the anode electrode, and the captured luminance information is anode current.

20. (Canceled).

21. (Original) The method of driving a display panel according to claim 3, wherein input luminance signals are corrected in accordance with the correction values stored in the correction memory.

22. (Original) The method of driving a display panel according to claim 3, wherein the amplitude value or the pulse width of driving signals applied to the display panel is corrected in accordance with the correction values stored in the correction memory.

23. (Original) The method of driving a display panel according to claim 3, wherein the correction values are calculated so as to incorporate data for γ correction for each pixel and stored to the correction memory.

24. (Previously Presented) The method of driving a display panel according to claim 3, wherein a gray scale realization method for the display panel is either an amplitude control method or pulse width control method.

25. (Previously Presented) The method of driving a display panel according to claim 3, wherein a gray scale realization method for the display panel is a gray scale system such that except when an output is completed, a current or voltage value for amplitude control is changed only in an increasing direction.

26. (Previously Presented) The method of driving a display panel according to claim 3, wherein a gray scale realization method for the display panel is a driving system such that amplitude control and pulse width control are carried out simultaneously.

27. (Previously Presented) The method of driving a display panel according to claim 26, wherein for the gray scale control, the amplitude control is such that using m high-order bits of gray scale data represented by n bits, where m and n are arbitrary positive integers, a current or voltage value controlled by amplitude is outputted at intervals of $1/2^m$ maximum value and the pulse width control is such that using $(n-m)$ low-order bits, pulse width is controlled at intervals of $1/2^{(n-m)}$ maximum value.

28. (Original) The method of driving a display panel according to claim 26, wherein the LSB of current or voltage value output is outputted twice, or the LSB or output pulse width is outputted twice, or the LSB of both are outputted twice.

29. (Original) The method of driving a display panel according to claim 26, wherein the number of divisions of output for pulse width control is greater than the number of divisions of output for amplitude control.

30. (Previously Presented) The method of driving a display panel according to claim 3, wherein a gray scale realization method of the display panel is a driving method for realizing gray scale display comprising switching between amplitude control or pulse width control and a system of gray scale control in which amplitude control and pulse width control are carried out simultaneously.

31. (Previously Presented) The method of driving a display panel according to claim 30, wherein, when the luminance signal level to be outputted is equal to or less than a reference value, amplitude control or pulse width control is carried out, and when equal to or greater than a reference value, the system of gray scale control where amplitude control and pulse width control are carried out simultaneously is carried out to realize gray scale display.

32. (Original) The method of driving a display panel according to claim 31, wherein the reference value is a number of output gray scale levels and is set to be the number of gray scale levels on the pulse width control side in the system of gray scale control where amplitude control and pulse width control are carried out simultaneously.

33. (Previously Presented) The method of driving a display panel according to claim 30, wherein the gray scale realization system is switched according to time to realize gray scale display.

34. (Currently Amended) A luminance correction device, comprising luminance target means for setting pixel luminance to a target luminance setting value at least two times at predetermined time intervals, and luminance resetting means for carrying out luminance setting operations such that a luminance setting value is set to a different luminance setting value each time, and wherein the luminance setting value is changed with the elapse of driving time, and further comprising:

luminance determining means for determining the luminance setting value from measured luminance information of the ~~pixel~~ pixels, wherein the luminance setting value is determined from measured luminance information of the pixels during successive video blanking periods.

35. (Previously Presented) The luminance correction device according to claim 34, further comprising luminance correcting means for correcting pixel luminance to match the luminance setting value.

36. (Currently Amended) A luminance correction device for a display panel, comprising:

luminance target means for setting pixel luminance to a target luminance setting value at least two times at predetermined intervals;

luminance resetting means for carrying out luminance setting operations such that a luminance setting value is set to a different luminance setting value each time;

driving means for driving pixels;

luminance measuring means for capturing luminance information from the pixels, wherein the luminance setting value is determined from the measured luminance information of the pixels during successive video blanking periods;

a correction memory for storing correction values;

calculating means for calculating correction values from the measured luminance information and the luminance setting value and storing the correction values to the correction

memory, and correcting means for correcting a driving amount in accordance with the correction memory;

wherein each of the luminance setting values does not exceed a preceding luminance setting value.

37. (Original) The luminance correction device according to claim 34, wherein each of the luminance setting values does not exceed a preceding luminance setting value.

38. (Currently Amended) A luminance correction device, comprising luminance target means for setting pixel luminance to a target luminance setting value at least three times at predetermined intervals with a luminance setting value determined from measured luminance information of the pixels during successive video blanking periods, and luminance correcting means for carrying out luminance correcting operations such that each of the time intervals between the luminance correction operations differ, and wherein the starting interval of recorreption operation is varied, wherein the intervals between the luminance correction operations are varied according to luminance degradation characteristics of display elements.

39. (Previously Presented) The luminance correction device according to claim 38, wherein the intervals between the luminance correction operations are varied according to luminance degradation characteristics of display elements.

40. (Currently Amended) A luminance correction device for a display panel, comprising driving means for driving pixels, luminance measuring means for measuring luminance information from the pixels, a correction memory for storing correction values, calculating means for calculating correction values from measured luminance information and ~~the~~ a luminance setting value and storing the correction values to the correction memory, correcting means for correcting a driving amount in accordance with the correction memory, and controlling means for carrying out a series of renewal operations on the correction memory for all of the pixels at least two times at predetermined time intervals, wherein the luminance setting value is determined from measured luminance information of the pixels during successive video blanking periods.

41. (Previously Presented) The luminance correction device for a display panel according to claim 40, wherein the controlling means is such that the series of renewal operations on the correction memory, instead of being carried out at specified time intervals, is repeated continuously.

42. (Previously Presented) The luminance correction device according to claim 35, wherein the operations for correcting luminance setting values are carried out during periods other than video output periods.

43. (Previously Presented) The luminance correction device for a display panel according to claim 40, further comprising controlling means for controlling the capture of

Serial No.: 10/089,802
Docket No.: 28951.3110

luminance information from the pixels so that at least the pixels are illuminated during periods other than video output periods.

44. (Original) The luminance correction device for a display panel according to claim 43, wherein the periods other than video output periods are vertical blanking periods, and luminance information from a given number of grouped pixels is captured during each of these periods.

45. (Original) The luminance correction device for a display panel according to claim 43, wherein the controlling means is such that adjacent pixels are not successively illuminated.

46. (Previously Presented) The luminance correction device for a display panel according to claim 36, wherein said calculating means for calculating correction values uses both the measured luminance information and degradation characteristics related to either the luminance of elements for which luminance has been measured or to the luminance of pixels for which luminance has been measured and for renewing a correction memory.

47. (Previously Presented) The luminance correction device for a display panel according to claim 46, wherein the display panel has a light-emitting surface of phosphors, and wherein the calculation correcting means is such that, the correction value calculations are

carried out using both the measured luminance information and degradation characteristics related to the luminance of the phosphors.

48. (Original) The luminance correction device for a display panel according to claim 46, wherein the calculation correcting means is such that the degradation characteristics are measured in advance, rates of degradation are calculated based on the rates on the driving integral of driving current for every pixel, correction values are calculated using both the measured luminance information and the rates of degradation, and the correction memory is renewed.

49. (Original) The luminance correction device for a display panel according to claim 35, further comprising controlling means for controlling the correction operations so that until the difference between the measured luminance information and the luminance setting value reaches a fixed value or less, the correction operations are repeated continuously.

50. (Original) The luminance correction device for a display panel according to claim 36, wherein the luminance measuring means is such that the captured luminance information is driving current.

51. (Original) The luminance correction device for a display panel according to claim 36, wherein the luminance measuring means is such that the capturing luminance information is that of the starting point of the illumination of pixels.

52. (Original) The luminance correction device for a display panel of claim 36, wherein the display panel has at least an anode electrode and a light-emitting surface having a plurality of phosphors on the anode electrode, and the captured luminance information is anode current.

53. (Currently Amended) The luminance correction device for a display panel of claim 36, comprising:

~~luminance target means for setting pixel luminance to a target luminance setting value at least two times at predetermined intervals;~~

~~luminance resetting means for carrying out luminance setting operations such that a luminance setting value is set to a different luminance setting value each time; and~~

controlling means for, in the initial stage after fabrication of the panel, illuminating all of the pixels in the panel one at a time, capturing luminance information from the pixels, calculating correction values from the luminance information and a luminance setting value, and storing the correction values to a correction memory as initial correction values.

54. (Previously Presented) The luminance correction device for a display panel according to claim 36, wherein the correcting means for correcting a driving amount in accordance with correction values stored in a correction memory is for correcting input luminance signals.

55. (Previously Presented) The luminance correction device for a display panel according to claim 36, wherein the correcting means for correcting a driving amount in accordance with correction values stored in a correction memory is for correcting the amplitude or the pulse width of driving signals applied to the display panel in accordance with the correction values stored in the correction memory.

56. (Currently Amended) ~~The driving device for a display panel, the device comprising the~~ luminance correction device for a display panel according to claim 36, ~~and~~ wherein a gray scale realization method for the display panel is an amplitude control method or pulse width control method.

57. (Currently Amended) ~~The driving device for a display panel, the device comprising the~~ luminance correction device for a display panel according to claim 36, ~~and~~ wherein a gray scale realization method for the display panel is a system of gray scale display such that except when an output is completed, a current or voltage value for amplitude control is changed only in the direction of increase.

58. (Currently Amended) ~~The gray scale driving device for a display panel, the device comprising the~~ luminance correction device for a display panel according to claim 36, ~~and~~ wherein a gray scale realization method of the display panel is a driving system such that amplitude control and pulse width control are carried out simultaneously.

59. (Currently Amended) The ~~driving~~ luminance correction device for a display panel according to claim 58, wherein for the gray scale control, the amplitude control is such that using m high-order bits of gray scale data represented by n bits, where m and n are arbitrary positive integers, a current or voltage value controlled by amplitude is outputted at intervals of $1/2^m$ maximum value and the pulse width control is such that using (n-m) low-order bits, pulse width is controlled at intervals of $1/2^{(n-m)}$ maximum value.

60. (Currently Amended) The ~~driving~~ luminance correction device for a display panel according to claim 58, wherein the LSB of current or voltage value output is outputted twice, or the LSB or output pulse width is outputted twice, or the LSB of both are outputted twice.

61. (Currently Amended) The ~~driving~~ luminance correction device for a display panel according to claim 58, wherein the number of divisions of output for pulse width control is greater than the number of divisions of output for amplitude control.

62. (Currently Amended) The ~~driving device for a display panel, comprising a~~ luminance correction device for a display panel of claim 36, ~~and~~ wherein a gray scale realization method of the display panel is a driving method for realizing gray scale display comprising switching between amplitude control or pulse width control and a system of gray scale control in which amplitude control and pulse width control are carried out simultaneously.

63. (Currently Amended) The ~~driving~~ luminance correction device for a display panel according to claim 62, further comprising means for realizing gray scale by, when the luminance signal level to be outputted is equal to or less than a reference value, carrying out amplitude control or pulse width control, and when equal to or greater than a reference value, carrying out the system of gray scale control where amplitude control and pulse width control are carried out simultaneously.

64. (Currently Amended) The ~~driving~~ luminance correction device for a display panel according to claim 63, wherein the reference value is a number of output gray scale levels and is set to be the number of gray scale levels on the pulse width control side in the system of gray scale control where amplitude control and pulse width control are carried out simultaneously.

65. (Currently Amended) The ~~driving~~ luminance correction device for a display panel according to claim 62, further comprising a means for realizing gray scale by switching the gray scale realization system according to time.

66. (Currently Amended) The ~~driving~~ luminance correction device for a display panel according to claim 56, wherein a correction memory has, for each pixel, a number of values equal to the number of levels of amplitude value.

Serial No.: 10/089,802
Docket No.: 28951.3110

67. (Currently Amended) The ~~driving~~ luminance correction device for a display panel according to claim 56, wherein the correction memory has, for each pixel, values that incorporate data for γ correction.

68. (Currently Amended) The ~~driving~~ luminance correction device for a display panel, ~~the device comprising the luminance correction device~~ according to claim 36, and wherein at least two of the correction memory, the correcting means, the calculating means, and the controlling means are combined.

69. (Canceled)

70. (Canceled)